

## A new species of *Asplenium* L. section *Thaunopteris* C.Presl (Aspleniaceae) from Lord Howe Island

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### ABSTRACT

*Asplenium goudeyi*, from Lord Howe Island and related to *Asplenium australasicum* (J.Sm.) Hook., is described and illustrated.

### Introduction

The opportunity is taken here to formally describe a fern, related to *Asplenium australasicum* (J.Sm.) Hook., that has become a popular horticultural subject in Victoria and New South Wales. The distinctiveness of the new species was recognised by Chris Goudey from Lara, Victoria, after he grew for a number of years plants that were originally collected on Lord Howe Island. Cultivated plants of *A. australasicum* and the new species contrast strikingly in growth habit as well as frond features including size, colour and texture. Holttum (1974) has drawn attention to the importance of growth habit in the taxonomic delimitation in this group of ferns and this was supported by the recognition of *A. harmanii* (Jones 1988). Green (1994) noted that the Lord Howe Island plants have 'a narrower, more erect habit, with thicker, more obtuse, glaucous fronds than those elsewhere', but concluded that more comparative observations were required.

### Methods

Cultivated plants of *Asplenium australasicum* from various locations in eastern Australia and the new species from Lord Howe Island have been grown in close proximity for five years in the glasshouses at the Australian National Botanic Gardens (ANBG), Canberra. Sporelings of both taxa, raised through two generations by Chris Goudey, have been found to maintain their individual characteristics. Samples of these progeny have been grown at the ANBG. Measurements given in descriptions are from living plants or from herbarium specimens. Notes on habitat were derived from my own field studies and those of Chris Goudey.

### Taxonomy

*Asplenium goudeyi* D.L.Jones, *sp. nov.*

affinis *Asplenium australasicum* (J.Sm.) Hook., sed frondibus brevioribus magis coriaceis obscure viridibus aliquantum glaucis in rosula magis erecta; costis cinereo-viridibus; et stipite cum porca dorsali obscura, differt.

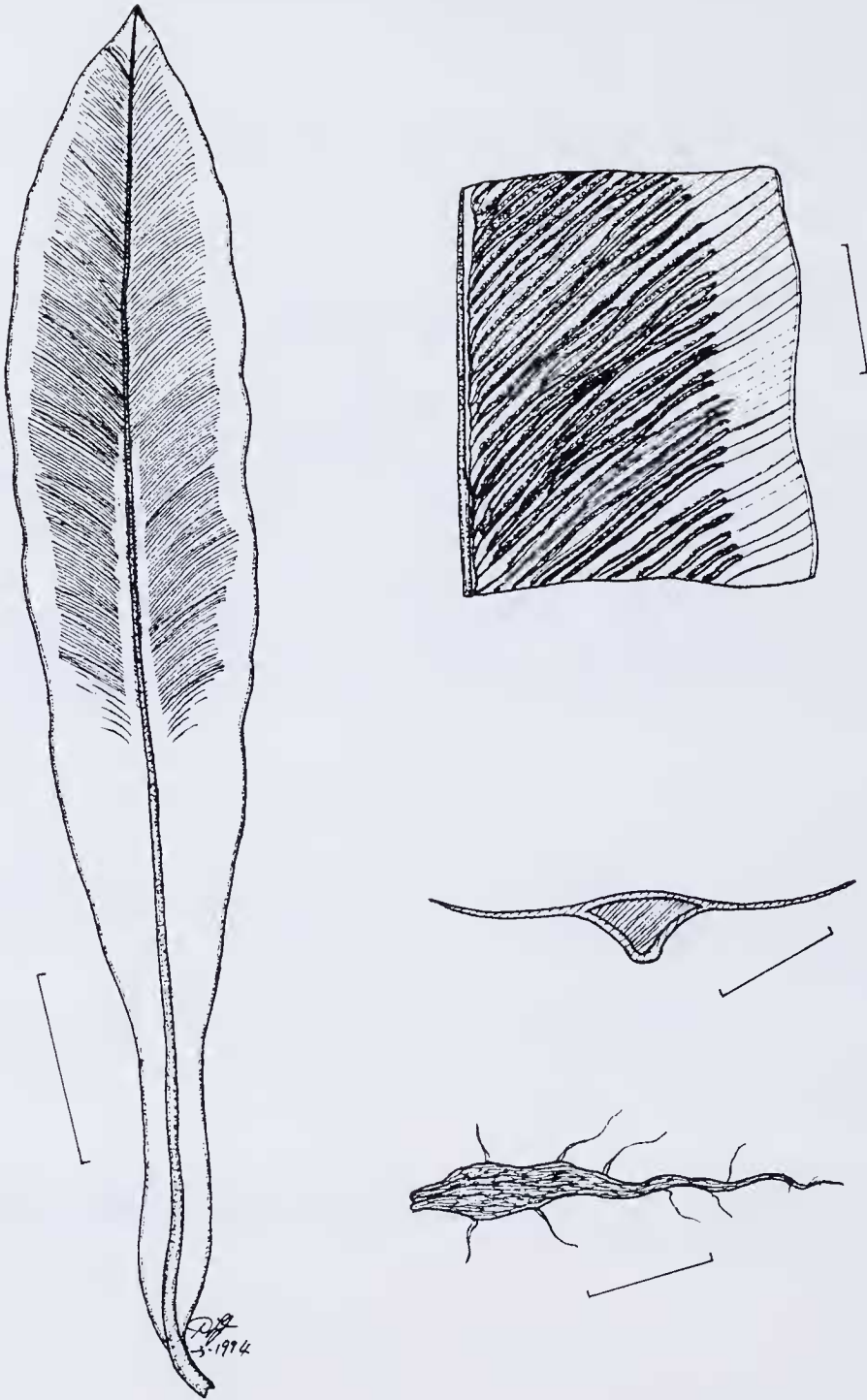


Fig. 1. *Asplenium goudeyi* D.L.Jones. a - abaxial view of leaf, scale-bar = 1 cm. b - section of fertile frond, scale-bar = 2 cm. c - T.S. through frond near base, scale-bar = 1 cm. d - rhizome scale, scale-bar = 1 cm. All drawn from Jones 5901 (CBG)

TYPE: cultivated at Australian National Botanic Gardens, Australian Capital Territory, Canberra, 22 Apr. 1990, *D.L. Jones 5901* (HOLOTYPE: CBG; ISOTYPE: AD, BRI, K, MEL, NSW, K). PROVENANCE: plant originally collected on the Goathouse Track, Mt Lidgbird, Lord Howe Island, 1985, *C.J. Goudey*.

*Lithophytic or epiphytic fern* with a very condensed spiral of steeply ascending fronds forming an erect, litter-collecting rosette. *Rhizome* erect, not branching, stout, woody, with a large mass of roots bearing copious, persistent, brown root hairs. *Scales* linear-lanceolate, c. 30 mm long, c. 2 mm wide, clothing apex of rhizome and base of stipes, thin-textured, clathrate, dark brown, margins with sparse, hair-like appendages. *Fronds* simple, more or less oblanceolate, 50-75 cm long, 12-18 cm wide, dull green with a glaucous bloom, coriaceous. *Stipes* short, stout, curved, greenish grey, somewhat shiny, adaxial surface nearly flat, hardly raised above the lamina, abaxial surface a broad, shallow vee, the ridge rounded. *Lamina* tapered to each end, margins entire or undulate, suddenly incurved in proximal quarter and forming a section c. 3 cm wide with nearly parallel margins before tapering into a short narrow wing which ends just above the stipe, apex obtusely apiculate. *Costa* of similar colour to stipe in proximal half to two thirds then becoming pale green, flat or shallowly raised adaxially, bluntly keeled abaxially. *Veins* forked once or twice near the costa or above the middle, a few of those on the basal section anastomosing, at an angle of c. 45° to costa, uniting to form a continuous vein c. 0.5 mm from margins. *Sori* narrow, linear, present on nearly every vein or vein branch in the distal half of a fertile frond, extending from near the costa for three-quarters of the distance to the margin. *Indusia* c. 0.3 mm wide, reflexed at maturity. *Spores* monoletate, light brown, wing thickened or folded. (Fig. 1)

#### DISTRIBUTION

Endemic on Lord Howe Island where locally common.

#### HABITAT

Grows as an epiphyte on trees in closed forest and as a lithophyte on basalt rocks, boulders and cliff faces, sometimes in very exposed situations.

#### NOTES

*Asplenium goudeyi* has obvious affinities with *A. australasicum* but can be distinguished readily from this species by the much more leathery, dull green, thicker-textured fronds which have a glaucous appearance (yellow-green in *A. australasicum*). The fronds are much shorter than those of *A. australasicum*, (to 75 cm long compared with over 2 m long in *A. australasicum*), and arise at a steeper angle to the rhizome, so that the rosette is more erect than the widely radiating rosette of *A. australasicum*. In addition, the stipe and costa are grey-green (blackish in *A. australasicum*) and the obtuse ridge on the abaxial surface of the costa is in marked contrast to the strongly acute ridge of *A. australasicum*. These characteristics are retained in cultivation and sporelings of each species can be distinguished from an early age, the leaf colouration and the erect frond habit of *A. goudeyi* being distinctive. *Asplenium goudeyi* also has some similarities to *A. nidus* L. but that species has larger fronds (to 1.5 m long), the midrib on the adaxial surface is prominently raised and rounded (level with the lamina and flat in *A. goudeyi*) and the sori extend about halfway from the midrib to the lamina margin (about three-quarters the distance in *A. goudeyi*).

#### CONSERVATION STATUS

This species is common and conserved.

#### ETYMOLOGY

It gives me much pleasure to name this species after Christopher John Goudey, ardent fern enthusiast and nurseryman from Lara, Victoria. Mr Goudey introduced the species into cultivation and later recognised its distinctiveness.

## SPECIMENS EXAMINED

LORD HOWE ISLAND: Smoking Tree Ridge, 22 Oct. 1978, *Telford 7063* (CANB); track to Mt Gower, 14 Mar. 1990, *Harman s.n. (D.L.Jones 5750)* (CANB); E. side of North Hummock, *Beaglehole 5589* (MEL).

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